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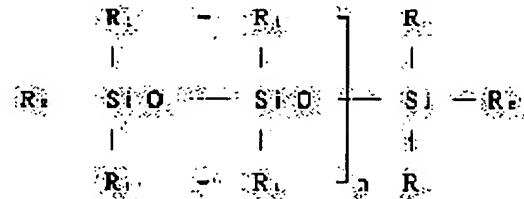
(22) Date of filing : 28.02.1996 (72) Inventor : NIWASE HIDEAKI

(54) SHAMPOO COMPOSITION

(57) Abstract:

PROBLEM TO BE SOLVED: To obtain a shampoo composition excellent in foaming and conditioning effects by containing an extract of Quillaja Saponaria Mol and a specific high molecular weight silicone.

SOLUTION: This shampoo composition contains 0.1-20wt.% of an extract from barks of Quillaja Saponaria Mol which is an evergreen tree of the rose family and 0.05-5wt.% of a high molecular weight silicone expressed by the formula [R1 is methyl or partly phenyl; R2 is methyl or OH; (n) is 700-9000] as effective ingredients. The bark of Quillaja Saponaria Mol contains triterpenoid-based saponin which expresses excellent surfactant functions. As the high molecular weight silicone of the formula, dimethylpolysiloxane is cited as an example. The shampoo composition is capable of enhancing adhesion of the silicone to damaged hair and improving easy combing and hair gathering after shampoo.



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* NOTICES *

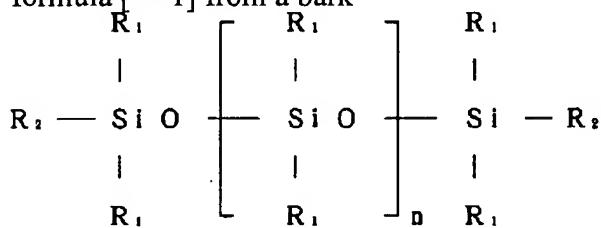
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CLAIMS

[Claim(s)]

[Claim 1] Quillaja SAPONARIA mol (Quillaja Saponaria Mol) The extract and the following general formula [** 1] from a bark



(A methyl group or a part of R1 expresses a phenyl group among a formula, and R2 expresses a methyl group or a hydroxyl group.) Moreover, n expresses the integer of 700-9,000. Shampoo constituent containing the amount silicone of macromolecules expressed.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention is excellent in foaming, raises a sex and settlement nature further as the comb of the hair after a shampoo, and relates to the shampoo constituent in which the outstanding conditioning effectiveness is shown.

[0002]

[Description of the Prior Art] By blending silicone with a shampoo, acquiring the conditioning effectiveness is known well (JP,63-45213,A). However, with a class, molecular weight, etc. of that silicone itself is water-insoluble nature and the silicone to be used, combination in the shampoo of silicone goes away at the time of the fall of foaming, the fall of the settlement nature by the are recording to hair, and the humidity of hair, and has various problems, such as a feeling of a stain. Especially in the case of the hair over which it mourned, there is a fault that the conditioning effectiveness is not fully demonstrated. Thus, while excelling in foaming, the shampoo with which the conditioning effectiveness of silicone was fully demonstrated is not developed yet.

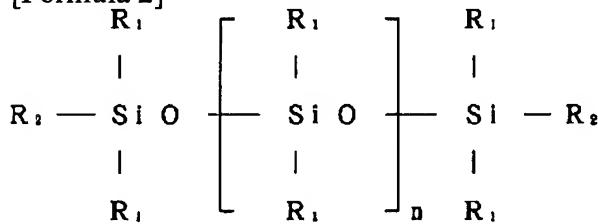
[0003] Then, this invention aims at offering the shampoo constituent which was excellent in foaming and was excellent in the conditioning effectiveness of raising a sex and settlement nature as the comb of the hair after a shampoo.

[0004]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, as a result of this invention person's inquiring wholeheartedly, the shampoo constituent containing the extract from the bark of a quillaja SAPONARIA mol and the specific amount silicone of macromolecules was excellent in foaming, raised the adhesion of the silicone to the hair over which it mourned, and resulted in a header and this invention having the outstanding conditioning effectiveness of raising a sex and settlement nature as the comb of the hair after desiccation.

[0005] That is, this invention is [an extract and] the following general formula [0006] from a bark of a quillaja SAPONARIA mol (Quillaja Saponaria Mol).

[Formula 2]



[0007] (A methyl group or a part of R1 expresses a phenyl group among a formula, and R2 expresses a methyl group or a hydroxyl group.) Moreover, n expresses the integer of 700-9,000. It is a shampoo constituent containing the amount silicone of macromolecules expressed.

[0008]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained in full detail. Although the quillaja SAPONARIA mol used for this invention is evergreen Takagi of Rosaceae currently grown wild or grown by Chile in South America, Peru, and the Bolivia district, the triterpenoid system saponin called a quillaja saponin is contained in the bark part. The surface activity ability excellent in this saponin is shown. The manufacture approach of the extract from this bark is stated to the detail at JP,59-155398,A.

[0009] It filters, after adding 20l. of purified water to 1kg of desiccation barks of quillaja and exuding at 70 degrees C, if the example of manufacture of this extract is shown. a filtrate -- synthetic macromolecule adsorption tree: -- it filters, after adding and stirring diamond ion HP-30 (Mitsubishi Chemical, Inc.). It filters, after adding 20l. of ethanol water solutions 60% and stirring to the residue. It condenses under reduced pressure of a filtrate and 70g of concentration **** is obtained. The insoluble matter when adding 1 and 3-butylene-glycol solution to this is filtered, and about 500g of extracts is obtained. In this extract, the saponin is contained about 8% of the weight. In this invention, this extract is named a quillaja extract generically.

[0010] Although especially the loadings of the aforementioned extract in the shampoo constituent of this invention are not restricted, it is desirable that it is 0.1 - 20 % of the weight in the shampoo whole quantity. If sufficient effectiveness cannot be acquired and it exceeds 20 % of the weight, when loadings are less than 0.1 % of the weight, since it will be generated with [of hair] **, it is not desirable.

[0011] If a chemical name shows the concrete molecular structure as amount silicone of giant molecules expressed with said general formula used for this invention, dimethylpolysiloxane, a methylphenyl polysiloxane, end hydroxyl-group content dimethylpolysiloxane, end hydroxyl-group content methylphenyl poly KISHISAN, etc. will be mentioned.

[0012] The loadings of the amount silicone of macromolecules have 0.05 - 5% of the weight of the desirable range. It becomes [the problem of the built up of the fall of foaming or the hair after desiccation arises, and] the bad hair of a settlement and is not desirable, if the conditioning effectiveness is not enough for less than 0.05% of the weight of a case and exceeds 5 % of the weight to it. Moreover, it falls [or less by 700 / foaming] about n in said general formula and is not desirable. On the other hand, if 9,000 is exceeded, a settlement of hair will worsen.

[0013] What is well-known as a component of a shampoo constituent other than the above-mentioned indispensable component may be blended with the shampoo constituent of this invention in the range which does not spoil the effectiveness of this invention. For example, a polyoxyethylene lauryl ethereal sulfate salt, a polyoxyethylene-fatty-acid-amide ethereal sulfate salt, Palm-oil-fatty-acid methyl taurine sodium, polyoxyethylene lauryl ether sodium acetate, Anionic surfactants, such as an N-acyl-L-aspartic acid salt and a palm-oil-fatty-acid ethyl ester sulfonate, Fatty-acid diethanolamide, a fatty-acid isopropanol amide, a lauryldimethyl amine oxide, The Nonion nature surfactants, such as the polyoxyethylene lauryl ether, Lauryldimethyl betaine aminoacetate, a lauric-acid amide propyl betaine, Amphoteric surface active agents, such as alkyl-N-hydroxyethyl-N-carboxymethyl imidazolinium betaine, Cationic surfactants, such as stearyl chloride trimethylammonium, Chlorination O-[2-hydroxy-3-(trimethylammonio) propyl] hydroxyethyl cellulose (POLYQUATERNIUM-10), Chlorination JIMECHI diaryl ammonium acrylamide copolymer liquid (POLYQUATERNIUM-7), Pori chlorination dimethyl methylene piperidinium liquid (POLYQUATERNIUM-6), a cationic polymer, higher alcohol, polyhydric alcohol, octopirox, zinc pilus thione, etc., such as chlorination O-[2-hydroxy-3-(trimethylammonio) propyl] Cyamoposis Gum, -- anti- -- a dandruff -- an agent, an ultraviolet ray absorbent, a protein derivative, etc. can be included.

[0014]

[Example] Next, an example explains this invention to a detail further. In addition, measurement of effectiveness was based on the following appraisal methods.

[0015] Foaming was measured according to the foaming Roth Miles examining method. However, a sample is a 2-% of the weight water solution (CaCO₃ 50ppm artificial hard water use), and temperature is 40 degrees C.

O -- [-- Foaming is a defect and less than 160mm [0016] of foaming.] Foaming is fitness and 250mm

[of more than foaming] O very much. -- Foaming is fitness, 210mm or more of foaming, and less than [250mm] **. -- Foaming is usually 160mm or more of foaming, and less than [210mm] x. It is as the comb of hair a sex (the conditioning effectiveness).

In order to investigate a sex as the comb of the hair after desiccation, the comb was attached in the stress sensor, and when liking hair, the size of the load concerning a comb was transformed to the electrical signal, it recorded, and stress was measured. since the 5 % of the weight water solution of shampoos washes the hair-bundle (the Parma processing damage hair) of 15g, and die length of 10cm, a rinse is repeated twice and it presses down lightly with a towel -- 25 degrees C and 65% -- after day-and-night desiccation and a comb -- the time -- that time -- starting -- stress -- having measured .

Score O: Compare with contrast (rinsing) and this force is less than 80%.

O : compare with contrast and this force is less than 90% - 80% or more.

**: Compare with contrast and this force is less than 100% - 90% or more.

x: Compare with contrast and this force is 100% or more.

[0017] Skid nature of hair (the conditioning effectiveness)

In order to investigate the skid nature (smooth nature) of the hair after desiccation, the dynamic friction coefficient was measured. The coefficient-of-friction measurement meter NRIII mold made from Japanese Rheology Device was used for measurement of a dynamic friction coefficient. Measuring conditions were the temperature of 25 degrees C, and 65% of humidity for [rotational frequency 3rpm and time amount] 100 seconds.

Score O: Skid nature is very good. Dynamic-friction-coefficient [of 0.09micro / below] k O: Skid nature is good. Dynamic-friction-coefficient 0.09-0.13microk**: Skid nature is common. Dynamic-friction-coefficient 0.13-0.18microkx: Skid nature is bad. It is [0018] more than the dynamic friction coefficient k of 0.18micro. Settlement nature of hair (the conditioning effectiveness)

It is the evaluation approach by organoleptics. The ease of being collected of the hair after it shampoos 5g of shampoo constituents of a sample and they carry out towel dry cleaning after a rinse for the hair was evaluated. 20 female special panels were chosen as a test objective person.

Score x when there are 7-11 persons whom **:settlement nature answered that it was good when there were 12-15 persons whom O:settlement nature answered that it was good when the person whom O:settlement nature answered that it was good was 16 or more persons: It is [0019] when the person whom settlement nature answered that it was good is six or less persons. The shampoo of the combination presentation shown in one to examples 1 and 2 and example of comparison 4 table 1 is prepared by the usual approach, the effectiveness of each indispensable component is investigated, and the result is shown in Table 1. In addition, loadings are weight %.

[0020]

[Table 1]

配合組成(重量%)	実施例		比較例			
	1	2	1	2	3	4
ポリオキシエチレン(3E.O.) ラウリルエーテル硫酸ナトリウム	10	10	10	10	10	10
キラヤ抽出物	5	5	5		5	5
ジメチルポリシロキサン(n=50)					2	
ジメチルポリシロキサン(n=800)	2			2		
ジメチルポリシロキサン(n=2,000)		2				
ジメチルポリシロキサン(n=15,000)						2
精製水	残余	残余	残余	残余	残余	残余
評価	泡立ち	◎	◎	○	×	×
	髪のくし通り性	◎	◎	×	△	△
	髪のすべり性	◎	◎	×	△	×
	髪のまとまり性	◎	◎	×	△	×

[0021] Each shampoo constituent (examples 1 and 2) using the component of this invention showed the outstanding engine performance so that clearly from this result. On the other hand, the shampoo constituent (examples 1 and 2 of a comparison) lacking in one of the indispensable components does not show sufficient engine performance. Moreover, although an indispensable component is included like the examples 3 and 4 of a comparison, engine performance sufficient in the thing besides the range of number specified by this invention is not shown.

[0022] The shampoo constituent shown in the 3rd example was prepared, and the aforementioned approach estimated. It was the evaluation which was excellent in any item.

(% of the weight)

1. Polyoxyethylene (3E.O.) Lauric-Acid Mono-Ethanol Amidosulfuric Acid Triethanolamine 12.02.

Lauric-acid amide propyl betaine 4.03. Ethylene glycol distearate 2.04. Quillaja extract 2.05.

Dimethylpolysiloxane (n= 1200) 1.56. sodium benzoate 0.37. perfume Optimum dose 8. purified water

Remainder [0023] The shampoo constituent shown in the 4th example was prepared, and the aforementioned approach estimated. Foaming was good and showed the outstanding conditioning effectiveness.

(% of the weight)

1. Polyoxyethylene (2E.O.) Lauric-Acid Mono-Ethanol Amide Sodium Acetate 10.02. Palm-oil-fatty-

acid methyl taurine sodium 5.03. Palm-oil-fatty-acid diethanolamide 3.04. Quillaja extract 3.05.

Dimethylpolysiloxane (n= 8000) 1.06. POLYQUATERNIUM-10 0.57. paraben 0.38. perfume Optimum

dose 9. purified water Remainder [0024] The shampoo constituent shown in the 5th example was

prepared, and the aforementioned approach estimated. Foaming is good and the hair after desiccation was easy coming to be collected.

(% of the weight)

1. Polyoxyethylene (3E.O.) Lauryl Ethereal Sulfate Magnesium 8.02. Lauroyl Hydrolysis Collagen

Potassium 2.03. Palm-oil-fatty-acid monoethanolamide 4.04. Ethylene glycol distearate 2.05.

POLYQUATERNIUM-6 0.56. Quillaja extract 5.07. Methylphenyl polysiloxane (n= 1000) 1.08. sodium benzoate 0.59. malic acid Optimum dose 10. Perfume Optimum dose 11. Purified water Remainder [0025]

[Effect of the Invention] It is clear to offer the shampoo constituent which this invention excelled [constituent] in foaming and was above excellent in the conditioning effectiveness, such as a sex, skid nature, and settlement nature, like a publication as the comb of the hair after a shampoo.

[Translation done.]

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(54) 【発明の名称】 シャンプー組成物

(57) 【要約】

【課題】泡立ちに優れ、更にシャンプー後の髪のくし通り性及びまとまり性を向上させる、優れたコンディショニング効果を示すシャンプー組成物を提供すること。

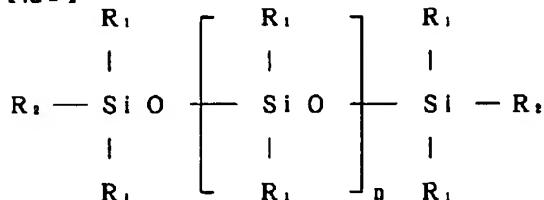
【解決手段】キラヤ・サボナリア・モル (Quillaja Saponaria Mol) の樹皮からの抽出物と特定の高分子量シリコーンとを含有させる。

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【特許請求の範囲】

【請求項1】 キラヤ・サボナリア・モル (Quillaja Saponaria Mol) の樹皮からの抽出物と、下記一般式

【化1】



(式中、 R_1 はメチル基または一部がフェニル基を表し、 R_2 はメチル基または水酸基を表す。また、 n は 700~9,000 の整数を表す。) で表される高分子量シリコーンとを含有するシャンプー組成物。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、泡立ちに優れ、更にシャンプー後の髪のくし通り性及びまとまり性を向上させ、優れたコンディショニング効果を示すシャンプー組成物に関する。

【0002】

【従来の技術及び発明が解決しようとする課題】シャンプーにシリコーンを配合することにより、コンディショニング効果を得ることはよく知られている(特開昭63-45213号公報)。しかし、シリコーンのシャンプーへの配合は、シリコーン自体が水不溶性であることと使用するシリコーンの種類及び分子量などにより、泡立ちの低下や髪への蓄積によるまとまり性の低下、髪の湿潤時のきしみ感など種々の問題を抱えている。特に、傷んだ髪の場合はコンディショニング効果が充分に発揮されないという欠点がある。このように泡立ちに優れるとともにシリコーンのコンディショニング効果が充分に発揮されたシャンプーはまだ開発されていないのである。

【0003】そこで、本発明は、泡立ちに優れ、シャンプー後の髪のくし通り性及びまとまり性を向上させるコンディショニング効果に優れたシャンプー組成物を提供することを目的とする。

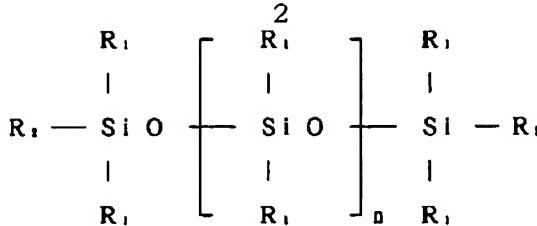
【0004】

【課題を解決するための手段】上記目的を達成するため、本発明者は、鋭意研究した結果、キラヤ・サボナリア・モルの樹皮からの抽出物と特定の高分子量シリコーンとを含有するシャンプー組成物は、泡立ちに優れ、傷んだ髪へのシリコーンの付着性を高め、乾燥後の髪のくし通り性、まとまり性を向上させる優れたコンディショニング効果を有することを見出し、本発明に至った。

【0005】すなわち、本発明は、キラヤ・サボナリア・モル (Quillaja Saponaria Mol) の樹皮からの抽出物と、下記一般式

【0006】

【化2】



【0007】(式中、 R_1 はメチル基または一部がフェニル基を表し、 R_2 はメチル基または水酸基を表す。また、 n は 700~9,000 の整数を表す。) で表される高分子量シリコーンとを含有するシャンプー組成物である。

【0008】

【発明の実施の形態】以下、本発明の実施の形態を詳述する。本発明に用いられるキラヤ・サボナリア・モルは、南米のチリ、ペルーおよびボリビア地方に自生、または栽培されているバラ科の常緑喬木であるが、その樹皮部分には、キラヤ・サボニンと呼ばれるトリテルペノイド系サボニンが含まれている。このサボニンがすぐれた界面活性能を示す。この樹皮からの抽出物の製造方法は特開昭59-155398号公報に詳細に述べられている。

【0009】この抽出物の製造例を示すと、キラヤの乾燥樹皮 1 Kg に精製水 20 リットルを加え、70°C で浸出した後、ろ過する。ろ液に合成高分子吸着樹: ダイヤイオン HP-30 (三菱化学(株)) を加え、攪拌した後、ろ過する。残留物に 60% エタノール水溶液 20 リットルを加え、攪拌した後、ろ過する。ろ液を減圧下で濃縮して濃縮液約 70 g を得る。これに 1,3-ブチレングリコール溶液を加えたときの不溶分をろ過し、抽出物約 500 g を得る。この抽出物中にはサボニンが約 8 重量% 含まれている。本発明ではこの抽出物をキラヤ抽出物と総称する。

【0010】本発明のシャンプー組成物中の前記の抽出物の配合量は特に制限されないが、シャンプー全量中の 0.1~20 重量% であることが好ましい。配合量が 0.1 重量% 未満の場合には、充分な効果を得ることができず、また 20 重量% を超えると、髪のごわつきが生じるので好ましくない。

【0011】本発明に用いられる前記一般式で表される高分子量シリコーンとしては、具体的な分子構造を化学名で示せば、ジメチルポリシロキサン、メチルフェニルポリシロキサン、末端水酸基含有ジメチルポリシロキサン、末端水酸基含有メチルフェニルポリキシサンなどが挙げられる。

【0012】高分子量シリコーンの配合量は 0.05~5 重量% の範囲が好ましい。0.05 重量% 未満の場合には、コンディショニング効果が充分でなく、また、5 重量% を超えると、泡立ちの低下や乾燥後の髪のビルトアップの問題が生じ、まとまりの悪い髪になり好ましくない。また、前記一般式中の n に関しては、700 以下

配合組成(重量%)	実施例		比較例			
	1	2	1	2	3	4
ポリオキシエチレン(3E.O.) ラウリルエーテル硫酸ナトリウム	1.0	1.0	1.0	1.0	1.0	1.0
キラヤ抽出物	5	5	5		5	5
ジメチルポリシロキサン($n=50$)					2	
ジメチルポリシロキサン($n=800$)	2			2		
ジメチルポリシロキサン($n=2,000$)		2				
ジメチルポリシロキサン($n=15,000$)						2
精製水	残余	残余	残余	残余	残余	残余
評価	泡立ち	◎	◎	○	×	×
	髪のくし通り性	◎	◎	×	△	△
	髪のすべり性	◎	◎	×	△	×
	髪のまとまり性	◎	◎	×	△	×

【0021】この結果から明らかなように本発明の成分を用いたシャンプー組成物(実施例1, 2)はいずれも優れた性能を示した。一方、必須成分のどちらかを欠いたシャンプー組成物(比較例1, 2)は充分な性能を示さない。また、比較例3, 4のように必須成分を含んで*

*も本発明で特定した数値の範囲外のものでは充分な性能が示されない。

【0022】実施例3

次に示すシャンプー組成物を調製し、前記の方法にて評価した。いずれの項目も優れた評価であった。

(重量%)

1. ポリオキシエチレン(3E.O.) ラウリン酸モノエタノール	
アミド硫酸トリエタノールアミン	12.0
2. ラウリン酸アミドプロピルベタイン	4.0
3. エチレングリコールジステアレート	2.0
4. キラヤ抽出物	2.0
5. ジメチルポリシロキサン($n=1200$)	1.5
6. 安息香酸ナトリウム	0.3
7. 香料	適量
8. 精製水	残余

【0023】実施例4

次に示すシャンプー組成物を調製し、前記の方法にて評価した。泡立ちが良く、優れたコンディショニング効果を示した。

(重量%)

1. ポリオキシエチレン(2E.O.) ラウリン酸モノエタノール	
アミド酢酸ナトリウム	10.0
2. ヤシ油脂肪酸メチルタウリンナトリウム	5.0
3. ヤシ油脂肪酸ジエタノールアミド	3.0
4. キラヤ抽出物	3.0
5. ジメチルポリシロキサン($n=8000$)	1.0
6. POLYQUATERNIUM-10	0.5
7. パラベン	0.3
8. 香料	適量
9. 精製水	残余

【0024】実施例5

次に示すシャンプー組成物を調製し、前記の方法にて評*

*価した。泡立ちが良く、乾燥後の髪がまとまり良くなつた。

(重量%)

1. ポリオキシエチレン(3E.O.) ラウリルエーテル硫酸マグネシウム	8.0
2. ラウロイル加水分解コラーゲンカリウム	2.0
3. ヤシ油脂肪酸モノエタノールアミド	4.0
4. エチレングリコールジステアレート	2.0
5. POLYQUATERNIUM-6	0.5
6. キラヤ抽出物	5.0
7. メチルフェニルポリシロキサン($n=1000$)	1.0
8. 安息香酸ナトリウム	0.5
9. リンゴ酸	適量
10. 香料	適量
11. 精製水	残余

【0025】

【発明の効果】以上記載のように、本発明が泡立ちに優れ、シャンプー後の髪のくし通り性、すべり性及びまと

※まり性などのコンディショニング効果に優れたシャンプー組成物を提供することは明らかである。